NOVEMBER/DECEMBER 2024

CSCS33 — DIGITAL LOGIC DESIGN AND COMPUTER ORGANIZATION (SBSI)

Time : Three hours Maximum : 75 marks

Shanmuga Industries Arts & Science College
T.V.Malai

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Convert the octal number 564 to binary.
2. Convert the decimal number 27 to hexadecimal
3. Solve the expression using binary addition 1011 + 1001.
4. Give the maximum number of variables can be represented in the K-Map.
5. Define demultiplexer.
6. What is meant by decoding?
7. Specify the format of memory reference instruction.
8. List out the stack operations.
9. Define cache memory.
10. List out the types of main memory.

SECTION B — (5 × 5 = 25 marks)

Answer ALL the Questions.

11. (a) Give an account on binary addition and subtraction with example.

Or

(b) Write short note on universal gates.

12. (a) Narrate the functioning of adder and subtractor with circuit truth table.

Or

(b) Discuss on the functioning of the BCD adder.

13. (a) Give the function of a multiplexer.

Or

(b) What is the use of encoder? Explain with circuit.

14. (a) Narrate the register organization of a system.

Or

(b) Exemplify the data manipulation operations.

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15. (a) Write short note on asynchronous data transfer.

Or

(b) Give an account on auxiliary memory.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the functions of logical gates with its truth table.

17. Simplify the Boolean expression

$$f(A, B, C, D, E) = \sum m(0, 3, 4, 7, 8, 12, 14, 16, 19, 20, 23, 24, 26, 28)$$

18. Elaborate the working of JK and master slave flip flop.

19. Describe the working methods of bus structure in the system.

20. Discuss on the significance of virtual memory.

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